

**Notice of Allowability**

Application No.

10/772,235

Examiner

Zachary C. Tucker

Applicant(s)

LI ET AL.

Art Unit

1624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 30 April 2007.
2. ☒ The allowed claim(s) is/are 1-4,6,8,10,12,14-21,36-41 and 55.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f):
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

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### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview, applicants' counsel, with Donald K. Drummond on 24 July 2007.

#### IN THE CLAIMS -

In claim 1, in the 7<sup>th</sup> line on page 4 of the amendment filed 30 April 2007, the phrase "is a bond or" has been deleted.

Claim 36 has been amended as shown:

36. A method of inhibiting PARP activity, thereby treating neural tissue damage resulting from ischemia and reperfusion injury, ~~or altering gene expression, or~~ radiosensitizing, comprising: administering a therapeutically effective amount of a compound of claim 1.

end of amendments

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***Response to Amendment***

As requested in the correspondence from applicants filed 30 April 2007 (hereinafter "present amendment"), which is in reply to the Office action mailed 31 January 2007 (hereinafter "previous Office action"), claims 1, 4, 14, 15 and 36 have been amended, claims 5, 7, 9, 11, 13, 22-35 and 42-54 have been cancelled, and new claim 55 has been added.

Also as requested, the abstract has been replaced with the new amended abstract.

***Election/Restrictions***

The present amendment cancels claim 54, which is drawn to a nonelected invention, identified as Group V in the Requirement, which was mailed 26 September 2006.

Pursuant to the present amendment to the claims, only subject matter according to Group I is presently claimed, wherein Y is nitrogen.

***Status of Claim Rejections - 35 USC § 112***

In the previous Office action, claims 1-53 were rejected under the second paragraph of 35 U.S.C. 112, for indefiniteness, on several different grounds.

The term "heteroalkyl" appeared twice in the definition of variable R<sup>9</sup> in claim 1. The present amendment deletes one of the occurrences of the term.

In the definition of variable T, the limitation "when present" appeared in claim 1. This limitation has been deleted by the present amendment. The present amendment replaced the term "when present" with alternative language permitting "T" to be a bond, but this language has been deleted by the attached Examiner's Amendment, authorized by applicants' counsel.

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In the definition of variable "T" also, the term "lower alcohol" was recited. This term was found to be indefinite, because an alcohol is a compound *per se*, not a proper denotation for a substituent on or in a molecule's structure. The term "lower alcohol" has been replaced with "hydroxy-lower alkyl" by virtue of the present amendment, as was suggested in the previous Office action by the examiner.

A dangling valency was noted in the structure diagram represented in claim 5, which claim has now been cancelled.

The first seven compounds specified in claim 9 lacked a group "T" which is required in the claim from which claim 9 depended. Claim 9 has now been cancelled.

It was stated in the Office action that the first two compounds in claim 10 lacked a group "T" as well. This statement was made in error; the Office action should have stated that this particular defect appeared in claim 11. It appears that applicants have gathered that claim 11 was the intended subject of the rejection, as claim 11 has now been cancelled.

In claim 14, which is an independent claim, it was noted that, similar to claim 1, the definition of variable "T" included the limitation "when present" while "T" is always present according to the structure diagram of formula (II) of claim 14. The phrase "when present" has been deleted.

In the last two lines of claim 14, the limitation referring to optional replacement of carbon atoms with heteroatom-containing-moieties chosen from a group was deemed to be ambiguous, as it was not clear whether the language referred to any carbon atom in formula (II), or to only some portion of the molecule specified by formula (II). Applicants have amended claim 14 so that the language refers only to the substituent groups on "T."

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In the previous Office action, it was noted that claims 22 and 36 did not specify which isoform of PARP is being inhibited by the method according to those claims. In response to the rejection, applicants argue that they are entitled to a claim drawn to inhibition of the PARP genus. The examiner hereby withdraws the rejection in view of the argument. Applicants, it is agreed, may specify PARP generally in their method and not violate the second paragraph of 35 U.S.C. 112.

In the previous Office action, claims 24 and 43 were found to be indefinite by virtue of the language "diseases or disorders relating to lifespan or proliferative capacity of cells, and diseases or disease conditions induced or exacerbated by cellular senescence." Claims 24 and 43 have been cancelled.

All of these rejections under 35 U.S.C. 112, second paragraph, have been either rendered moot by cancellation of the rejected claim or have been overcome by amending the rejected claim, or by convincing argument (claim 36). Thus, all rejections under 35 U.S.C. 112, second paragraph are hereby withdrawn.

In the previous Office action, claims 1-53 were rejected under 35 U.S.C. 112, first paragraph, for lack of enablement of the prodrugs embodiment of the compounds of the present invention. In the present amendment, many of the claims rejected on this ground have been cancelled, and language referring to prodrugs of the inventive compounds has been deleted. Thus, the individual claim rejections have been either rendered moot or accordingly are hereby withdrawn in view of the present amendment.

Also in the previous Office action, claims 22-53 were under the first paragraph of 35 U.S.C. 112, because the methods were not fully enabled. Many of the rejected claims

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have been cancelled by the present amendment, and those particular claim rejections are moot. The rejection of instant claims 36-41 under the first paragraph of 35 U.S.C. 112 is hereby withdrawn, as the claim is now enabled pursuant to the attached Examiner's Amendment and also the present amendment (which partially overcame the rejection).

***Status of Claim Rejections - 35 USC § 102***

In the previous Office action, claim 14 was rejected under 35 U.S.C. 102(b) as being anticipated by Sieglitz et al, *Chemische Berichte*, vol. 95, pages 3013-3029 (1962).

In view of the present amendment, the rejection is hereby withdrawn. The value of variable "q" cannot now be zero.

***Status of Double Patenting Rejections***

In the previous Office action, claims 1-6, 8, 10, 12, 14 and 16-21 were found to be unpatentable over claims 1-9, 11 and 12 of U.S. Patent No. 6,716,828, under the judicially-created doctrine of Obviousness-Type Double Patenting (ODP).

In view of the Terminal Disclaimer over US 6,716,828, the ODP rejection is hereby withdrawn.

In the previous Office action, claims 1, 9 and 14 were found to be unpatentable over claims 1-3 of U.S. Patent No. 6,291,425, under the ODP doctrine.

In view of the Terminal Disclaimer over US 6,291,425, the ODP rejection is hereby withdrawn.

In the previous Office action, claim 13 was rejected as being drawn to the same invention as claim 10 of US 6,716,828 – a statutory double patenting rejection. Claim 13 has been cancelled by the present amendment, thus rendering the rejection moot.

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In the previous Office action, claim 7 was rejected as being drawn to the same invention as claim 1 of US 6,291,425 – a statutory double patenting rejection. Claim 7 has been cancelled, thus rendering the rejection moot.

***Specification – Objection to the Abstract***

Objection to the abstract of the disclosure was indicated in the previous Office action, because the abstract was not sufficiently descriptive of the present invention. In view of the submission of a replacement abstract, the objection is hereby withdrawn.

***Allowable Subject Matter***

Claims 1-4, 6, 8, 10, 12, 14-21, 36-41 and 55 are allowed.

The following is an examiner's statement of reasons for allowance:

All of the rejections and objections raised in the previous Office action have been overcome either by appropriately amending the rejected claims, canceling the rejected claims, filing of a Terminal Disclaimer, or by convincing argument. Compounds according to the present invention are novel and unobvious over the prior art, particularly the Sieglitz et al reference which formed the basis for a rejection under 35 U.S.C. 102(b), now withdrawn. A full copy of the Sieglitz et al reference, as opposed to the abstract which was relied upon in the rejection, is provided with this Notice of Allowance, to complete the record.

Also particularly close prior art with respect to the present invention is U.S. Patent No. 6,514,983 (Li et al). Some of the compounds disclosed in columns 13-16 of Li et al would anticipate the present claims if "T" were permitted to be a bond. Since "T" is not permitted to be a bond, however, the patent does not anticipate any of the instant claims.

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Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

All Post-Allowance Correspondence concerning this application must be mailed to:

Mail Stop Issue Fee  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Or you can fax them to the Office of Patent Publications at 703-872-9306, in order to expedite the handling of such correspondence as amendments under 37 CFR 1.312; information disclosure statements, and formal drawings. Sending Post-Allowance papers to Technology Center 1600 will only cause delays in matching papers with the case.

For information concerning status of correspondence sent after receipt of the Notice of Allowance, please contact the Correspondence Branch at (703) 305-8027. The Notice of Allowance also has an insert containing contact information on other items, including Issue Fees, receipt of formal drawings and the status of the application.



ZACHARY C. TUCKER  
PRIMARY EXAMINER